

**Amendment and Response**

Applicant: Michael R. Krause

Serial No.: 10/099,607

Filed: March 15, 2002

Docket No.: 10004123-1

Title: ACCESS CONTROL IN A NETWORK SYSTEM

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**IN THE CLAIMS**

Please amend claims 1-6, 8, 10, 19, 37, 42, 49, 59, and 62 as follows:

1. (Currently Amended) A network system comprising:  
links;  
end stations coupled between the links, wherein types of end stations include endnodes which originate or consume frames and routing devices which route frames between the links, wherein at least one end station includes:  
an access control filter configured to restrict routes of frames from at least one end station on a selected routing path based on a selected frame header field including at least one of a next header field and an opcode field.
2. (Currently Amended) The network system of claim 1 wherein the at least one end station ~~having the access control filter~~ includes at least one routing device.
3. (Currently Amended) The network system of claim 2 wherein the at least routing device ~~having the access control filter~~ includes at least one switch.
4. (Currently Amended) The network system of claim 2 wherein the at least routing device ~~having the access control filter~~ includes at least one router.
5. (Currently Amended) The network system of claim 1 wherein the at least one end station ~~having the access control filter~~ includes at least one endnode.
6. (Currently Amended) The network system of claim 1 wherein the at least one endnode ~~having the access control filter~~ includes at least one processor endnode.
7. (Original) The network system of claim 6 wherein the at least one processor endnode includes a network interface controller which includes the access control filter.

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8. (Currently Amended) The network system of claim 1 wherein the at least one endnode ~~having the access control filter~~ includes at least one input/output (I/O) adapter endnode.
9. (Original) The network system of claim 8 wherein the at least I/O adapter endnode includes an I/O adapter which includes the access control filter.
10. (Currently Amended) The network system of claim 1 wherein the access control filter ~~in the at least one end station~~ is implemented in hardware.
11. (Original) The network system of claim 1 wherein the selected frame header field comprises a next header field.
12. (Original) The network system of claim 11 wherein the access control filter restricts selected frame types indicated in the next header field from entering selected routes.
13. (Original) The network system of claim 11 wherein the access control filter restricts raw datagram frames indicated in the next header field from entering selected routes.
14. (Original) The network system of claim 1 wherein the selected frame header field comprises an opcode field.
15. (Original) The network system of claim 14 wherein the access control filter restricts routes of frames based on a type of operation being attempted as indicated in the opcode field.
16. (Original) The network system of claim 15 wherein the type of operation being attempted is a management operation.
17. (Original) The network system of claim 15 wherein the type of operation being attempted is a data operation.

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18. (Original) The network system of claim 15 wherein the type of operation being attempted is a route update operation.

19. (Currently Amended) An end station configured to operated in a network system having end stations coupled between links, the end station comprising:

an access control filter configured to restrict routes of frames from at least one end station on a selected routing path based on a selected frame header field including at least one of a next header field and an opcode field.

20. (Original) The end station of claim 19 wherein the end station is a routing device which routes frames between the links.

21. (Original) The end station of claim 20 wherein the routing device comprises a switch.

22. (Original) The end station of claim 20 wherein the routing device comprises a router.

23. (Original) The end station of claim 19 wherein the end station is an endnode which originates or consumes frames.

24. (Original) The end station of claim 23 wherein the endnode is a processor endnode.

25. (Original) The end station of claim 24 wherein the processor endnode includes a network interface controller which includes the access control filter.

26. (Original) The end station of claim 23 wherein the endnode is an input/output (I/O) adapter endnode.

27. (Original) The end station of claim 26 wherein the I/O adapter endnode includes an I/O adapter which includes the access control filter.

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28. (Original) The end station of claim 19 comprising hardware which implements the access control filter.
29. (Original) The end station of claim 19 wherein the selected frame header field comprises a next header field.
30. (Original) The end station of claim 29 wherein the access control filter restricts selected frame types indicated in the next header field from entering selected routes.
31. (Original) The end station of claim 29 wherein the access control filter restricts raw datagram frames indicated in the next header field from entering selected routes.
32. (Original) The end station of claim 19 wherein the selected frame header field comprises an opcode field.
33. (Original) The end station of claim 32 wherein the access control filter restricts routes of frames based on a type of operation being attempted as indicated in the opcode field.
34. (Original) The end station of claim 33 wherein the type of operation being attempted is a management operation.
35. (Original) The end station of claim 33 wherein the type of operation being attempted is a data operation.
36. (Original) The end station of claim 33 wherein the type of operation being attempted is a route update operation.
37. (Currently Amended) A routing device configured to route frames between the links in a network system, the routing device comprising:

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an access control filter configured to restrict routes of frames from at least one end station on a selected routing path based on a selected frame header field including at least one of a next header field and an opcode field.

38. (Original) The routing device of 37 wherein the routing device comprises a switch having the access control filter.

39. (Original) The routing device of claim 37 wherein the routing device comprises a router having the access control filter.

40. (Original) The routing device of claim 37 wherein the selected frame header field comprises a next header field.

41. (Original) The routing device of claim 37 wherein the selected frame header field comprises an opcode field.

42. (Currently Amended) An endnode configured to originate or consumes frames in a network system, the endnode comprising:

an access control filter configured to restrict routes of frames from at least one end station on a selected routing path based on a selected frame header field including at least one of a next header field and an opcode field.

43. (Original) The endnode of claim 42 wherein the endnode is a processor endnode.

44. (Original) The endnode of claim 43 wherein the processor endnode includes a network interface controller which includes the access control filter.

45. (Original) The endnode of claim 42 wherein the endnode is an input/output (I/O) adapter endnode.

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46. (Original) The endnode of claim 45 wherein the I/O adapter endnode includes an I/O adapter which includes the access control filter.

47. (Original) The endnode of claim 42 wherein the selected frame header field comprises a next header field.

48. (Original) The endnode of claim 42 wherein the selected frame header field comprises an opcode field.

49. (Currently Amended) A method of controlling access in a network system having —links and end stations coupled between the links, wherein types of end stations include endnodes which originate or consume frames and routing devices which route frames between the links, wherein the method comprises:

restricting routes of frames from at least one end station on a selected routing path based on a selected frame header field including at least one of a next header field and an opcode field.

50. (Original) The method of claim 49 wherein the restricting includes restricting routes of frames from or through at least one routing device.

51. (Original) The method of claim 49 wherein the restricting includes restricting routes of frames from or through at least one switch.

52. (Original) The method of claim 49 wherein the restricting includes restricting routes of frames from or through at least one router.

53. (Original) The method of claim 49 wherein the restricting includes restricting routes of frames from or through at least one endnode.

54. (Original) The method of claim 49 wherein the restricting includes restricting routes of frames from or through at least one processor endnode.

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55. (Original) The method of claim 54 wherein the restricting is performed by a network interface controller.
56. (Original) The method of claim 49 wherein the restricting includes restricting routes of frames from or through at least one input/output (I/O) adapter endnode.
57. (Original) The method of claim 56 wherein the restricting is performed by an I/O adapter.
58. (Original) The method of claim 49 wherein the restricting is performed by hardware.
59. (Currently Amended) The method of claim 49 wherein the selected frame header field comprises a next header field.
60. (Original) The method of claim 59 wherein the restricting includes restricting selected frame types indicated in the next header field from entering selected routes.
61. (Original) The method of claim 59 wherein the restricting includes restricting raw datagram frames indicated in the next header field from entering selected routes.
62. (Currently Amended) The method of claim ~~49~~ wherein the selected frame header field comprises an opcode field.
63. (Original) The method of claim 62 wherein the restricting includes restricting routes of frames based on a type of operation being attempted as indicated in the opcode field.
64. (Original) The method of claim 63 wherein the type of operation being attempted is a management operation.

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65. (Original) The method of claim 63 wherein the type of operation being attempted is a data operation.

66. (Original) The method of claim 63 wherein the type of operation being attempted is a route update operation.